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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,331	12/16/2003	Kevin Wilson	2802-202-016	7552

7590 05/03/2005

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EXAMINER

FRISTOE JR, JOHN K

ART UNIT PAPER NUMBER

3751

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/737,331

Applicant(s)

WILSON, KEVIN

Examiner

John K. Fristoe Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 8, 9, 11-13, 15, 16, 22, 23 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 3-7, 10, 17-21 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/16/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 12/16/2003 is acknowledged by the examiner.

Drawings

2. The drawings are objected to because diaphragm member (26) is not pointed out within the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 8, 9, 11, 12, 15, 16, 22, 23, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,012,700 (Johnson et al.) in view of U.S. Pat. No. 4,232,284 (Phelon et al.). Johnson et al. disclose a solenoid valve assembly comprising a valve (8 and 9), a housing made of encapsulant (2, col. 1, lines 41-44), a bobbin (4), a coil (3), a central cavity (the space inside bobbin 4 in figure 8), a yoke (14), flux plate (15, the portion underneath the coil in figure 1), a flux gap (the space between plat 15 and the coil 3 in figure 1), lead wires (33 and 34) embedded in the encapsulant, terminal means (the wires 33 and 34 are inherently connected to the coil by means of an electrical connector or terminal), , upon energization of the coil (3) causes movement of the valve member (8 and 9), a connector assembly (the right end portion of the wires 33 and 34 in figure 1) that extends from the housing (2), wherein the encapsulant is a non-magnetic thermoplastic (col. 1, lines 41-44), and wherein the housing (2) is the outermost container for the electromagnetic device (3) but lacks a hollow conduit that encompasses the lead wires. Phelon et al. teach a solenoid assembly comprising a coil (15) that is embedded in plastic, a terminal (col. 4, lines 2-5), a hollow conduit (36) that is parallel to the central cavity of the coil (15), the hollow conduit is embedded in the plastic (see in figure 1) and lead wires (35) that extend form the hollow conduit (36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the solenoid valve assembly having lead wires with connectors that extend form the housing of Johnson et al. by embedding a hollow conduit in the housing that encompasses the lead wires as taught by Phelon et al. in order to protect the lead wires from excessive bending or to outside forces which may damage the wire, which would lead to the valve to being inoperable.

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5. Claims 13 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,012,700 (Johnson et al.) in view of U.S. Pat. No. 4,232,284 (Phelon et al.) as applied to claims 1 and 15 above, and further in view of U.S. Pat. No. 4,438,418 (Neff). Johnson et al., modified above, disclose a solenoid valve assembly comprising a coil, housing made of encapsulant, lead wires, and a hollow conduit embedded in the housing that protects the lead wires but lacks a flux bushing with the interior cavity of the bobbin. Neff teaches a solenoid assembly comprising a coil (13), lead wires (67), and a flux bushing (27 and 30, made of a magnetic material col. 3, lines 23-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the solenoid valve assembly having a bobbin of Johnson et al. by adding a flux bushing as taught by Neff in order to concentrate the magnetic field on the armature of the solenoid in order to more effectively move the armature.

Allowable Subject Matter

6. Claim 14 is allowed.

7. Claims 3-7, 10, 17-21, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 3,932,828 (Plunkett et al.) disclose a solenoid assembly that is encapsulated.

U.S. Pat. No. 6,246,309 (Heinz et al.) disclose a solenoid assembly that is encapsulated.

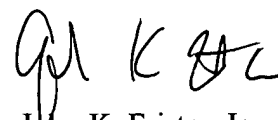
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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Fristoe Jr. whose telephone number is (571) 272-4926.

The examiner can normally be reached on Monday-Friday, 7: 00 a.m-4: 30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine R. Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John K. Fristoe Jr.
Examiner
Art Unit 3751

JKF



EDWARD K. LOOK
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5/2/05